

zot

A Reference Implementation of the *OCI/distribution-spec*

<https://github.com/anuvu/zot>

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Motivation

- Build our Kubernetes environment on OCI and CNCF community standards
 - *runc* - OCI runtime [1]
 - *cri-o* - bridges OCI runtime and k8s CRI [2]
 - OCI standards based image registry

[1] <https://github.com/opencontainers/runtime-spec>

[2] <https://github.com/cri-o/cri-o>

docker registry?

- Only docker image format (tar/gzip blobs and JSON media type)
- More recently, OCI image support on the wire
- OCI distribution spec not necessarily a first-class citizen
- docker repository layout for storing images/layers

OCI Standards-Based Image Registry

- Is there a OCI standard for image registry?
 - *OCI distribution spec* [1]
 - OCI image support as first-class citizen on the wire
 - Preferably, OCI layout for storing images/layers

[1] <https://github.com/opencontainers/distribution-spec>

***zot*: Goals**

- A reference implementation of the OCI distribution spec
- Similar to **choice** of container runtimes, offer an alternative to docker registry

***zot*: Features**

- Conforms to OCI distribution spec APIs
- *golang* implementation
 - single binary, simple to run
 - Swagger based docs
- Uses OCI image layout to store layers/images
- TLS support
- Authentication via TLS mutual authentication and HTTP BASIC (local *htpasswd* and LDAP)
- Doesn't require root privileges
- Swagger based documentation

zot: Ecosystem

Server-side

- zot

Client-side

- anuvu/image (*patched* containers/image) [1]
 - skopeo [2]

```
skopeo copy docker://docker.io/busybox:latest zot://zot.example.com:3000/busybox:latest
skopeo copy docker://docker.io/busybox:latest oci:busybox:latest
```

- cri-o

```
crio.conf:
default_transport = "zot://"
```

[1] <https://github.com/anuvu/image>

[2] <https://github.com/anuvu/skopeo>

Demo

Roadmap

- A ~~OCI image~~ more-general-content repository
- Image signing and verification
- Integrate with image scanning service (viruses, etc)
- Multi-tenancy access controls (for images/projects)
- Richer queries
- Clustered/reliable zot
- Follow along and contribute to distribution spec

Q&A